



UNITED STATES PATENT AND TRADEMARK OFFICE

cel

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,352	12/03/2003	Lynn A. Marsan	D-2003-0010	8603

7590 04/19/2005
Robert K. Tendler
65 Atlantic Avenue
Boston, MA 02110

EXAMINER

AL NAZER, LEITH A

ART UNIT PAPER NUMBER

2821

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,352

Applicant(s)

MARSAN ET AL.

Examiner

Leith A. Al-Nazer

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2004 and 20 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 9-15 in the reply filed on 18 January 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 9-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 9 recites "A method for increasing the bandwidth of a monocone antenna, comprising the step of increasing the size of a monocone antenna without increasing the size of the apex base thereof..." However, the specification fails to disclose a dynamic monocone antenna structure capable of increasing in size while maintaining the same size apex base. Therefore, the specification is not enabling.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 9-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites "increasing the size of a monocone antenna without increasing the size of the apex base". This term is vague and indefinite. Clearly not all of the dimensions of the monocone are being increased because, as the claim states, the size of the apex is not being increased. However, it is unclear exactly which dimensions of the monocone antenna are being increased.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 9-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Applicant is attempting to claim a scientific principle that is devoid of a tangible structure. The result of increasing the size of a monocone antenna without increasing

Art Unit: 2821

the size of the apex base can be determined by known equations governing electromagnetism, such as Maxwell's equations.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,851,859 to Rappaport in view of U.S. Patent No. 5,038,152 to Wong et al.

With respect to claims 9 and 10, Rappaport teaches a monocone antenna. Claims 9 and 10 require increasing the bandwidth of the monocone antenna by increasing the size of a monocone antenna without increasing the size of the apex base thereof. The governing equations regarding monocones and their associated

dimensions and radiating patterns are well known in the art and are discussed in the disclosure of Rappaport (column 1, line 1 – column 2, line 50). Using such equations, one having ordinary skill in the art can formulate the relationship between the size of the antenna, the size of the apex base, and the overall bandwidth of the antenna.

Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to increase the bandwidth of the system of Rappaport by increasing the size of Rappaport's monocone antenna without increasing the size of the apex base. The motivation for doing so would have been to obtain increased bandwidth.

Claim 11 requires the cone angle of the monocone be between 24 degrees and 30 degrees. It is well known in the art that the antenna flare angle can be adjusted in order to achieve desired operating properties, as is suggested by Rappaport (column 5, line 60 – column 6, line 30). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Rappaport and specifically state a cone angle of between 24 degrees and 30 degrees. The motivation for doing so would have been to obtain an efficient system with desired operating properties, such as a low VSWR.

Claim 12 requires the apex base diameter be 0.065". It is well known in the art that the apex base dimensions can be adjusted in order to achieve desired operating properties, as is suggested by Rappaport (column 5, line 60 – column 6, line 30). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Rappaport and specifically state an apex

base diameter of 0.065". The motivation for doing so would have been to obtain an efficient system with desired operating properties, such as a low VSWR.

Claim 13 requires the height of the cone be 1.6" and the width of the widest part of the cone be 1.95". It is well known in the art that the width of the cone can be adjusted in order to achieve desired operating properties, as is suggested by Rappaport (column 5, line 60 – column 6, line 30). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Rappaport and specifically state the height of the cone being 1.6" and the width of the widest part of the cone being 1.95". The motivation for doing so would have been to obtain an efficient system with desired operating properties, such as a low VSWR.

Claim 14 requires the cone have a non-conical extension on top thereof. Wong teaches such a non-conical extension (42). At the time of the invention, it would have been obvious to one having ordinary skill in the art to include a non-conical extension, as taught by Wong, in the system of Rappaport. The motivation for doing so would have been to obtain a system which radiates with desired properties, such as a system that emits omnidirectional radiation. Claim 14 further requires the combined height of the cone and extension be 1.6" and the width of the widest part of the non-conical extension be 1.5". It is well known in the art that cone dimensions can be adjusted in order to achieve desired operating properties, as is suggested by Rappaport (column 5, line 60 – column 6, line 30). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Rappaport and specifically state the dimensions recited in claim 14. The motivation for doing so would

Art Unit: 2821

have been to obtain an efficient system with desired operating properties, such as a low VSWR.

With respect to claim 15, Rappaport teaches the monocone being mounted in spaced adjacency to a ground plane (figure 4) and wherein the antenna pattern of the monocone antenna is substantially omnidirectional to the side of the ground plane that the cone is located.

Response to Arguments

11. Applicant's arguments filed 20 September 2005 have been fully considered but they are not persuasive.

Applicant argues that Rappaport does not teach a method for increasing the bandwidth of "anything, much less a monocone antenna". Applicant further argues that the Examiner has cited Rappaport as having some formulas relating to monocone antennas, absolutely nowhere is the diameter m related to the bandwidth of the antenna. Although Rappaport does not explicitly state that the bandwidth of the antenna can be increased by increasing the size of the antenna without increasing the size of the apex, as stated in the rejection above under 35 U.S.C. 103, Examiner believes that one having ordinary skill in the art would be able to use known equations governing the laws of electromagnetism, some of which are included in the Rappaport patent, to deduce the relationship stated in claim 9, namely that the bandwidth of a monocone antenna can be increased without increasing the size of the apex base thereof.

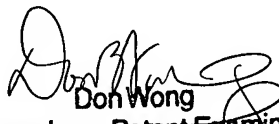
Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leith A. Al-Nazer whose telephone number is 571-272-1938. The examiner can normally be reached on Monday-Friday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LA


Don Wong
Supervisory Patent Examiner
Technology Center 2800